

ON THE TACHINID GENUS *EUTHERA* (DIPTERA), WITH DESCRIPTION
OF NEW SPECIES FROM AUSTRALIA, AFRICA
AND SOUTH AMERICA.

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(Communicated by Dr. E. W. Ferguson.)

(Three Text-figures.)

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To the Dipterous genus *Euthera* belong the most striking and beautiful forms of the family Tachinidae, and, as is the case with many other genera of this interesting family, the species seem to be very rare, only isolated specimens being found; perhaps the flies are met with only occasionally because the bionomics are quite unknown. The genus has a wide distribution, being recorded from North America and from the Mediterranean subregion. I know it, however, from the whole Ethiopian region, as well as from Australia and from South America. It is therefore of world-wide distribution, ranging from about latitude 45° North to 36° South.

The genus *Euthera* was founded by Loew (1866, pp. 46-47) with the single species *tentatrix*, based on a solitary specimen collected at New York by Baron Osten-Sacken. It is one of the eleven species of Tachinidae selected by Loew for description from one thousand species of North American Diptera; they are all striking forms (Loew, 1872, p. 122), but *Euthera* and *Himantostoma* (now *Imitomyia*) are the most striking of all. Osten-Sacken (1876, p. 154) has the genus *Euthera* near *Scopolia*, quoting the species from New York and Texas.

The next record of the genus *Euthera* is to be found in an important paper by Prof. Mik (1889, pp. 129-134), in which the author has presented notes on the characters, as well as on the systematic position, together with the description of the new species, *E. manni* from Lesina, Dalmatia (one male, collected by Novak) and from Brussa, Asia Minor (one couple, collected by Mann). The paper is illustrated with two figures drawn by Prof. Brauer, and contains the information that the specimens from Brussa were already recognized by Osten-Sacken as belonging to *Euthera*. Prof. Mik is of the opinion that the genus belongs to the Phasiinae, *sensu* Rondani.

Brauer and Bergenstamm (1889, p. 140) have the genus in the group Schineriidae, between Ocypteridae and Gymnosomatidae, with a figure (Plate x, fig. 278) of the head of the female *manni*; subsequently (1891, p. 411 and p. 433; 1893, p. 110 and p. 152) they have repeated the characters, assuming them always from the species *manni*, the true genotype *tentatrix* being quite unknown to them.

Tyler Townsend (1892, p. 141 and p. 144) has placed *Euthera* with the Tachinidae, having excluded it from the preceding paper of 1891, dealing with Phasiidae, Ocypteridae, etc.

Prof. Brauer (1893, p. 474 and p. 493) again has the genus near *Schineria*, giving *mannii* as type.

Coquillett (1897, p. 37 and p. 120) has placed the genus near *Demoticus*, recording the species from Pennsylvania and Georgia. Williston (1896, p. 148) records only the name of the genus.

Prof. Strobl in his works on the Diptera from Bosnia and Dalmatia (1898, p. 443 and 1900, p. 597) quotes the species *mannii* from Island Lesina, but without having seen it.

Coquillett (1902, p. 114) described a second North American species, *Euthera bicolor*, from Texas, only from the female. Aldrich (1905, p. 469) records the genus near *Tachina*, with the two North American species, without adding new localities.

I myself (1907, p. 566) have the genus near *Selimeria*, with the species *mannii* and the usual citations.

Prof. Williston (1908, p. 374) has the genus near *Acemyia*, giving (p. 368, fig. 80 and 81) figures of head and of wing of *tentatrix*. Coquillett (1910, p. 543) gives *tentatrix* as genotype of *Euthera*, and Johnson (1910, p. 781) records the species *tentatrix* from New Jersey.

Tyler Townsend (1912, p. 49) places the genus *Imitomymia* in the subfamily *Phasiidae*, tribe *Eutherini*. Villeneuve (1913, p. 43) has recorded *E. mannii* from Nyasaland, but this record probably refers to one of the Ethiopian species described below. Tyler Townsend (1916, p. 178) erected the new genus *Eutheropsis* for *mannii*, defining it (1916a, p. 322) and locating it in the fam. *Rhadogynidae*.

Dr. Villeneuve (1924, p. 32) has considered the genus *Euthera* as forming a special tribe in the *Phasiinae*, with the genera *Hermymia*, *Clara*, *Baraclara*, etc.; while in the same year Prof. Stein (1924, p. 178) has the genus in the group *Trixa*, near *Redtenbacheria*.

Finally Johnson (1925, p. 204) has the genus in the Tachininae, near *Acemyia*, recording the species *tentatrix* from various localities.

From the above quoted works is to be seen how different are the opinions of authors about the systematic position of *Euthera*. In my collection I have placed it with *Schineria* near the Phaniinae, but Dr. Villeneuve (1924, p. 33) has placed the latter genus near *Echinomyia*, excluding it from the Phaniinae.

The seven known species, five of which are before me, can be distinguished as follows:—

- 1 (12) The small apical scutellar bristles diverging; female with orbital bristles, frontal bristles curved inwardly and all decussate; three pairs of dorsocentral and two pairs of acrostichal bristles before the suture; female with the frontal stripe considerably narrower than one of the parafrontalia, these latter very broad, shining black, not or slightly dusted; submarginal cell with hyaline spot.
- 2 (7) New World species; head entirely red, with quite bare parafacialia, with prominent mouth border and with rounded, swollen facial keel; front tarsi of female quite simple, coxae and femora reddish, second abdominal segment without strong macrochaetae in middle of hind border; wing-base and costal cells of a bright yellowish colour; calypters likewise yellowish and opaque (*Euthera*, s. str.).
- 3 (6) All the coxae reddish, tibiae and tarsi entirely black; terminal half of second costal cell and stigma blackish; third posterior cell quite hyaline; alula broadly yellowish at base; scutellum with two pairs of lateral bristles.
- 4 (5) Abdomen entirely shining black; the dark middle band of wings interrupted by broad hyaline streaks into the submarginal and the discoidal cell *tentatrix* Loew.
- 5 (4) Abdomen reddish-yellow with brownish dorsal spots; dark middle band of wings much broader and not interrupted by hyaline streaks *bicolor* Coquillett.

- 6 (3) Coxae in greatest part black, tibiae and tarsi reddish; second costal cell and stigma entirely yellowish; third posterior cell blackened; alula entirely black; no hyaline streaks into the middle band of wings; scutellum with three pairs of lateral bristles, the middle one smaller *barbiellini*, n. sp.
- 7 (2) Old World species; head in greatest part black; female with front tarsi flattened; coxae always black, second abdominal segment with strong macrochaetae; wing base whitish hyaline and costal cells blackish, third posterior cell partly infuscated; alula entirely black, calypters whitish hyaline (*Eutheropsis* T. T.).
- 8 (9) Mouth border prominent; facial keel swollen and rounded in profile, parafacialia distinctly pilose in their whole length; frontal stripe dark reddish .. *mannii* Mik.
- 9 (8) Mouth border not at all prominent; facial keel sharp, straight in profile, low; frontal stripe deep black.
- 10 (11) Palpi red; coxae and femora black; parafacialia thinly pilose in the middle; scutellum with a pair of diverging apical bristles and with a pair of discal ones; bend of fourth vein angular, the apical crossvein straight and less oblique *tuckeri*, n. sp.
- 11 (10) Palpi black; coxae and femora red; parafacialia quite bare in middle, with only a few hairs above; scutellum with only the two pairs of lateral bristles, without apical and discal ones; bend of fourth vein more rounded, the apical crossvein more oblique *péringueyi*, n. sp.
- 12 (1) Small apical bristles of scutellum decussate; female without orbital bristles; frontal bristles erected, not decussate; five presutural dorsocentral and three presutural acrostichal bristles, mouth border prominent, frontal stripe red, in the female much broader than one of the parafacialia, these latter very narrow and densely dusted, not shining; face yellow in the middle, palpi red, wing base whitish hyaline, costal cells blackish; submarginal cell without hyaline spot; calypters white (*Macreuthera*, n. subgen) *skusei*, n. sp.

Genus EUTHERA Loew.

For generic characters, sexual differences, etc., see Mik, Brauer and Coquillett. It may be added: facial ridges with 3-4 thin, bristly hairs just above the vibrissae, hind coxae destitute of bristles, all the wing-veins bare, even at common stem of radius and at base of third vein.

Subgenus EUTHERA, s. str.

The species of this subgenus are well characterized by the rich wing-pattern, having yellow base of wings and yellow calypters; they are exclusively American.

1. EUTHERA TENTATRIX Loew. Text-fig. 1, A.

This is the genotype known only from the United States (Massachusetts, Pennsylvania, New Jersey, New York, Georgia and Texas). I have in my collection one female from Tifton, Ga., October, 1896, and another female from Great Notch, N.Y., 30th October, 1906. Seems to be an aestivo-autumnal species, being not found before August.

The male of the present species is not yet described; the possibility is not excluded that it may have an infuscate third posterior cell, as in *barbiellini*.

2. EUTHERA BICOLOR Coquillett.

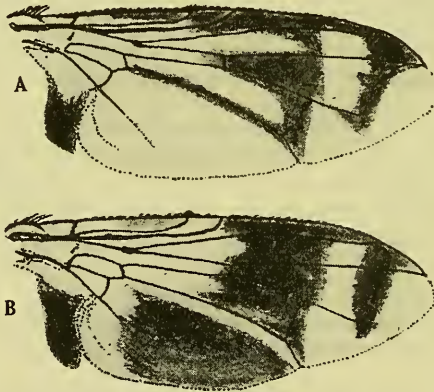
Described from Texas, without precise locality, and not found subsequently. The wing pattern seems to be like that of the following new species in the shape of the middle dark band, but the third posterior cell is quite hyaline.

3. EUTHERA BARBIELLINII, n. sp. Text-fig. 1, B.

Closely allied with the two preceding species, but distinct by the richer wing-pattern.

Type ♂, a single, badly preserved specimen in the writer's collection, caught near Sao Paulo, Brazil, by the Count A. A. Barbiellini, in whose honour this fine insect is named.

♂. Length of body 6 mm.; of wing 5 mm. Head entirely reddish, blackened only towards the middle of the occiput. Frons narrowed towards the vertex and there only one-half as broad as at antennae; parafrontalia black, densely dusted with grey; middle stripe red, at vertex as broad as one of the parafrontalia, but at antennae twice as broad; frontal bristles black, rather numerous, but not long, never strong, directed inward and decussate, extending below to the end of first antennal joint. Face entirely shining, yellowish with a narrow transverse black stripe in the middle; parafacialia as broad as the third antennal joint and rather opaque, being clothed with whitish dust, peristomialia shining, unspotted, twice as broad as the parafacialia, with whitish hairs behind. Antennae linear, elongate, longer than the face, with the two basal joints reddish and the third black; second joint three times as long as the first, with black setulae, third joint one and a half times as long as the second, attenuated at end; arista basal, entirely reddish, only a little longer than the third antennal joint, considerably thickened at base. Proboscis short and thick, dirty yellowish, palpi club-shaped,



Text-fig. 1. Wings of *Euthera*, enlarged.
A. *tentatrix* Loew; B. *barbiellini*, n. sp.

reddish. Thorax and scutellum entirely black, but too badly preserved for description; scutellum with three pairs of lateral bristles, the apical ones small and diverging, no discal. Calypters greatly developed, bare above, entirely of a bright yellowish colour. Halteres with yellowish stalk and blackish knob. Abdomen entirely shining black with black setulae and black bristles, these latter rather thin and short, present only at hind border of the segments, on the first and second segment only at sides; venter with all the sternites concealed; genitalia rounded, black, of middle size, well visible but not prominent. Coxae and trochanters black, only those of the front pair in part reddish, femora, tibiae and basal joints of the tarsi reddish, claws and pulvilli short, but distinctly, even if little, more developed than in the female of *tentatrix*. Wings with typical nervation, but the apical crossvein straighter, the terminal stalk of the first posterior cell being therefore longer. Wing base bright yellowish to the basal and anal crossveins, but along the fore border the yellow colour is extended into

the costal and subcostal cells to the end of stigma, which is likewise yellow; along the first basal cell the yellow colour is extended to a little before the small crossvein. The broad hyaline stripes into the base of submarginal and of discoidal cell are whitish. The middle dark band is broad and entire, extending from the costa to the fifth vein; the whitish-hyaline band beyond it is as broad as the dark preapical band; the marginal cell is entirely black to the end; the submarginal cell is narrowly infuscated at the extreme end. The third posterior cell is almost entirely dark brown, with a whitish hyaline streak along the fifth vein. Alula entirely blackish to the base.

Subgenus EUTHEROPSIS T.T.

The characters on which this subgenus was founded are not of sufficient value to be considered as generic, inasmuch as the Ethiopian species here described differ from the type-species in degree of ciliation of the parafacialia. The latter species has no prominent mouth border, while in *mannii* the mouth border is as prominent as in the American species. All the species show the infuscation of the third posterior cell, as in *barbiellinii*, but less intensive and equally present in both sexes.

4. EUTHERA MANNII Mik. ♂, ♀.

See descriptions and figures of Mik, Brauer and Stein. Known only from Dalmatia and Asia Minor; but Dr. Villeneuve tells me that he knows the species from British East Africa and from Formosa.

5. EUTHERA TUCKERI, n. sp. ♂. Text-fig. 2, A.

Distinct from the preceding on account of its mouth border not being prominent and of the lower facial keel. Type ♂, a single, badly preserved specimen in the South African Museum, Cape Town, from Transvaal, Koopmuiden, 30th October, 1918, collected by Rev. W. E. Tucker and named in honour of its discoverer.

♂. Length of body 7 mm.; of wing 5.5 mm. Head entirely black, shining only on lower part of occiput and on peristomialia. Frons rather narrow at vertex, being there twice as broad as the small ocellar triangle, gradually broadened forwardly, being at antennae three times broader than at vertex; frontal stripe deep black, broader than one of the parafrontalia, these latter white dusted, very narrow on basal half, broadened on apical half, and at antennae about as broad as the stripe; bristles black, decussate; no orbitals, ocellar very thin. Face entirely black, with slight whitish dust, not or very little shining; middle keel sharp, straight in profile, mouth border not at all prominent, parafacialia white dusted, with scattered thin hairs, as broad as the anterior part of the parafrontalia. Antennae wanting. Palpi rather thin, entirely yellowish, proboscis dirty blackish. Thorax entirely black; the back is rather shining with whitish dust, but the pattern is not distinguishable; scutellum like back. All the bristles black; three presutural dorsocentral and two acrostichal, scutellum with two strong lateral, one discal before end, and seemingly with a pair of very thin diverging apical. Calypters bare, whitish hyaline, with a narrow white border; halteres with whitish stalk and with blackish knob. Abdomen cylindrical, thick, entirely black, rather shining, with slight whitish dust, which is denser at sides below; setulae and bristles black, the latter at sides of all segments, and in middle of hind border from the second segment to

the end; genitalia rounded, shining black, not prominent but open; sternites concealed. All the coxae and the legs of first pair entirely black; other legs wanting. Wings normal, bend of fourth vein angular but obtuse, the apical crossvein straight and less oblique, parallel with the hind crossvein, the stalk of the first posterior cell being about one-half the length of the apical crossvein. Wing base whitish-hyaline. Costal, subcostal and marginal cell entirely black;



Text-fig. 2. Wings of *Euthera*, enlarged.
A. *tuckeri*, n. sp.; B. *péringueyi*, n. sp.

first dark band broad and entire, extended equally from the second to the fifth vein, including the two crossveins and going a little beyond them. Preapical band a little narrower than the whitish-hyaline band before it, end of submarginal cell entirely filled with brown; infuscation of third posterior cell less intensive, extending across the terminal half of this cell and of the axillary cell, but evanescent in middle at wing border. Alula entirely black.

6. EUTHERA PÉRINGUEYI, n. sp. ♀. Text-fig. 2, B.

Closely allied with the preceding species, but distinct by the characters of the above key; it seems impossible that it may be the female of preceding species.

Type ♀, a solitary, well preserved specimen in my collection from Chabra, Congo, dedicated to the memory of the late Doctor L. Péringuey, whose contributions to South African Entomology are universally esteemed.

♀. Length of body 7 mm.; of wing 5.5 mm. Head black, but the sides of the ocellar plate, the facial ridges and the antennal grooves are distinctly yellowish. Occiput shining black, considerably swollen, white dusted below at sides. Frons about as broad as one eye; middle stripe deep black, narrower than one of the parafrontalia, ocellar plate and parafrontalia very shining, the latter white dusted in front. Frontal bristles decussate; two orbital, the first pair much smaller than the second; ocellar bristles well developed. Parafacialia narrowed below, white dusted, with only a few hairs on the upper part. Face yellowish above, remainder black, but clothed with slight whitish dust, middle keel straight and low, mouth border not at all prominent, peristomialia shining black. Antennae longer than the face, first joint reddish; second joint reddish-brown, twice as long as the first, with black hairs; third joint black, linear, distinctly broadened and

upcurved at end, two and a half times as long as the second joint; arista as long as the third antennal joint, entirely reddish, bare, thickened at base. Palpi deep black, rather short and clavate; proboscis short, dirty reddish. Thorax black, shining, the whitish dust forming three broad stripes on the presutural part of back, pleurae white dusted. Scutellum very characteristic, triangular, flat, obtuse at end, black with slight whitish dust, there are only two pairs of lateral bristles, no discal and no apical, only a few short setulae on disc. Calypters whitish, opaque, halteres with blackish knob. Abdomen as in preceding species, but distinctly, even if little, compressed; bristles more developed, chiefly the middle pair at hind border of second segment; sides of third segment somewhat reddish. Coxae blackish, all the femora reddish, those of hind pair with blackish stripes below; tibiae and tarsi entirely deep black, front tarsi distinctly thickened. Bend of fourth vein rounded, the apical crossvein rather long and more oblique than the hind crossvein, the terminal stalk of first posterior cell much shorter than the apical crossvein. Pattern as in the preceding species, but with the preapical dark band broader and more curved.

Subgenus MACREUTHERA, nov.

This new subgenus is characterized by the different form of head, which is narrower and higher than in the other species; by the very different frons of the female, lacking the orbital bristles; and by the decussate apical scutellar bristles. The mouth border is as prominent as in *mannii*, the female front tarsi are not distinctly thickened. The type species is more robust and of greater size than the others; the abdominal macrochaetae are strong; in wing pattern it agrees with the Old World species, while in the quite bare parafacialia it agrees with the American ones.

Type: The following new species, *E. skusei*.

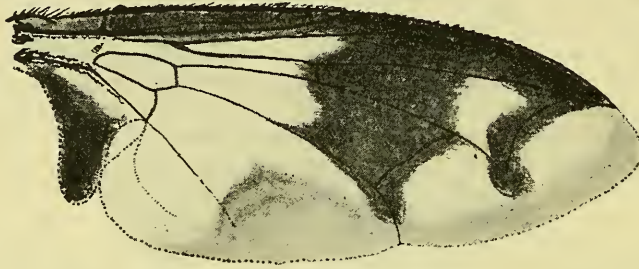
EUTHERA SKUSEI, n. sp. ♀. Text-fig. 3.

A robust species with reddish frontal stripe and with yellowish black-margined face.

Type ♀, a single specimen in the Health Department (New South Wales). Collection from Eidsvoll, December, 1922. Dedicated to the memory of the great Australian Dipterologist, Frederick A. A. Skuse.

♀. Length of body 10 mm.; of antennae 2.8 mm.; of wing 8 mm. Head in front view as broad as high. Occiput black, white dusted at sides and below, and there with a reddish stripe along the hind border of the eyes; just above the neck there is a deep black stripe, extending to the reddish postvertical spot and narrowly margined with white dust; a row of black postocular bristles, and black hairs below. Frons broad and gradually widening forward; middle stripe parallel sided, bare, much broader than one of the parafrontalia, entirely reddish, except for a black spot on the ocelli, parafrontalia narrow, near the vertex half as broad as the middle stripe, broadened in front, black, white dusted. Frontal bristles short and thin, erect, not decussate, ending at base of antennae; orbital bristles quite absent; one pair of ocellar; inner vertical long and strong. In profile the frons is much more prominent than in the allied species; eyes narrow, with the vertical diameter twice as long as the horizontal one. Face long and narrower than in the allied species, with the middle keel rounded and very prominent, and with the antennal grooves almost parallel; it is yellowish in middle, margined with black at sides and below; parafacialia quite bare, narrow,

not broader than the third antennal joint, reddish, but densely clothed with whitish dust; mouth border very prominent and black. Peristomialia much broader than in the other species, as broad as one-third of vertical diameter of eye, dark reddish, with a blackish triangular spot just below the eye. Antennae long, porrect, longer than the face; first joint short, dark reddish, second joint more than twice as long as the first, dark reddish, with black setulae and with a long erect bristle above near the base; third joint black, three times as long as the second, linear in the basal half, dilated in the terminal half and ending



Text-fig. 3. Wings of *Euthera skusei*, n. sp., enlarged (same scale as preceding figures).

obtuse; arista basal, not longer than the third antennal joint, quite bare, thickened and yellowish at base, whitish and very thin in the rest. Palpi clavate, dark reddish, black haired; proboscis short, dirty brownish. Thorax entirely black, rather shining; on the back the whitish dust forming two broad stripes separated by a black one, continued in front of suture by two narrow lines, the sides are broadly dusted forming three broad and two narrow stripes on whole back; pleurae white dusted. All hairs and bristles black, dorsocentral numerous, but rather small, three to four behind and five in front of suture; acrostical two behind and three in front of suture; two sternopleural, four to five hypopleural, a tuft on upper border of pteropleura. Scutellum like back, rather convex, with two pairs of long lateral bristles, one pair discoidal, apical very thin and small, decussate. Calypters greatly developed, bare, whitish and with a white border; halteres with black knob. Abdomen entirely shining black, with whitish dust; hairs black; second segment with two strong macrochaetae in middle of hind border, third segment with four, fourth with a complete row. Sternites concealed. Coxae and legs entirely black; front tarsi not distinctly thickened; claws and pulvilli short. Wings normal, bend of fourth vein V-shaped, the apical crossvein concave; stalk of first posterior cell one-third the length of the apical crossvein; small crossvein a little beyond middle of discal cell; hind crossvein a little S-shaped. Base of wing whitish-hyaline to the small crossvein, and even beyond this vein into the base of submarginal cell; costal, subcostal and marginal cells entirely black; submarginal cell entirely black in its terminal half, quite destitute of the hyaline spot of all the other species. The broad middle band filling up the whole space between the two crossveins with irregular sides, ending below at fifth vein. The preapical band is formed only by a black margin of the apical crossvein, prolonged only a little beyond the band and there ending rounded. The infuscation of the third posterior cell is less intensive, slightly developed. Alula entirely black.

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